Comprehensive Index for 1999

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capital on private sector costs of production and more. Quantitative assessments of the cost-reducing "productivity effects" of highway capital bear directly on the U.S. Department of Transportation's strategic objective to "advance America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation."

Reviving HOV Lanes, Robert Cervero, Fall 1999, 67–81.

The past year has been a turbulent one for high-occupancy vehicle (HOV) lanes in the United States. Although most HOV lanes operate successfully and new ones continue to be built, a populist revolt has suddenly surfaced against set-aside lanes for carpools and vanpools. Critics charge that HOV lanes are often grossly underutilized, and have thus failed to relieve congestion or improve air quality as promised.

Increasing the Social Acceptability of Urban Transport Projects, Jonathan L. Gifford, Fall 1999, 49–65.

Public consensus for expanding and improving urban transportation infrastructure has eroded significantly in the last several decades. Its erosion is evident in the opposition to new and expanded urban highway projects, despite worsening congestion and seemingly inexorable increases in public demand for automobiles and road space. Its erosion is also evident in flat or declining budgets for highway construction and maintenance, and the deferred maintenance of existing facilities.

Recent Advances in Understanding the Effects of Highway Investment on the U.S. Economy, Arthur C. Jacoby, Summer 1999, 27–34.

A number of research studies by and for the Federal Highway Administration's Office of Policy Development document the effects of public highway capital on logistics system and commercial sector economic performance. A notable example is M. Ishaq Nadiri's 1996 study, which examined the contributions of total highway capital and nonlocal highway capital to the output growth and productivity of 35 industry sectors comprising the U.S. economy. Nadiri's 1996 econometric analysis provides empirical evidence of the positive impacts of public highway capital on private sector costs of production. It also evaluates the effects of highway capital investment on the production sector's demand for labor, private capital formation, and materials. In addition, the analysis estimates the marginal commercial benefits of road system investments, calculates the net social rate of return on highway infrastructure spending, and identifies the contribution of highway capital and other economic factors to the productivity growth rate in the U.S. economy between 1950 and 1989.

Francis B. Francois, Recently Retired Executive Director of AASHTO (interview), C. Kenneth Orski, Spring 1999, 79–86.

During his tenure as executive director of AASHTO, Francis B. Francois was a key participant in virtually every aspect of transportation change. He played a major role in four legislative reauthorization efforts (1981, 1986, 1991, and 1996). He was instrumental in the launching of the Intelligent Transportation Systems program, and he helped usher in a new era of intermodal cooperation.

Technologies and Policies for Controlling Greenhouse Gas Emissions from the U.S. Automobile and Light Truck Fleet, Steve Plotkin, Spring 1999, 7–30.

The transportation sector produces slightly more than 30% of the green-

house gas emissions from the United States, with light-duty vehicles—automobiles and light trucks—accounting for more than half of the sector's emissions. This makes the light-duty vehicle fleet an appealing target for carbon emissions reductions undertaken in pursuit of satisfying the United States' potential obligations under the Kyoto Protocol. Furthermore, the current light-duty vehicle fleet is essentially fully dependent on petroleum for its energy supply, so reductions in greenhouse gases will yield similar reductions in U.S. oil use, an attractive proposition to those concerned about U.S. dependence on petroleum imports.

Reducing light-duty greenhouse gas emissions and petroleum use can be accomplished by increasing vehicle energy efficiency, shifting travel to more efficient modes, reducing travel overall (by increasing the price of travel, changing development patterns, or other means), changing fuels, and increasing vehicle occupancy. This article focuses on policies and technologies for increasing vehicle energy efficiency, though policies that raise fuel prices will encourage other physical measures, as well.

Intermodal Freight Transportation

The Need for an Integrated Intermodal Transport Liability Regime, Regina Asariotis, Spring 1999, 45–55.

Trade is increasingly conducted by way of intermodal transportation. According to the 1997 United Nations Conferences for Trade and Development's Review of Maritime Transport, the volume of the world's ocean-borne trade in containerized cargo will more than double over the next few years and rise to 1 billion tons by the year 2006. Most of this containerized cargo will involve transportation by more than one mode before reaching its final destination. The construction of road networks and landbridges, the development of block train services, and international joint ventures between operators will continuously increase the potential for the expansion of intermodal transport. At the same time, intermodal and port operators are heavily investing in technological developments, and improving systems for transferring cargo between different modes.

Drayage: Freight's Premier Bench Player (Ideas in Motion), Kevin N. Chang and Nancy L. Nihan, Summer 1999, 9–14.

Many interchangeable modes can be used for transporting goods and materials—sea, rail, roadway, air, or pipeline. Usually a particular mode is chosen because it inherently has economic or logistical advantages when compared with other modes.

Drayage, a type of roadway movement, uses local trucks to transport trailers and containers to and from intermodal facilities. For example, drayage is necessitated when ports lack on-dock rail services and must transport containers from a steamship to an off-site railyard, warehouse, or distribution center.

A Strategic Overview of Goods Movement in the Greater Toronto Area, Julius Gorys and Imants Hausmanis, Spring 1999, 101–114.

The development of urban areas is closely integrated with the form and structure of local and regional transportation systems. Improvements in transportation efficiency have been catalysts in both the definition of urban form and the siting and conduct of industry and commerce. Recently, there has been greater appreciation of the role of transportation and logistics with regard to the economic interdependence of regions, the cost of goods and ser-

vices, and the productivity and competitiveness of firms and communities.

MPOs and Railroad Intermodal Terminals: Successful Development Strategies, Frank R. Harder, Spring 1999, 31–44.

The information discussed in this article was presented at the Eno Transportation Foundation's "Improving Metropolitan Planning to Integrate Freight Transportation" policy forum held in October 1998. The forum addressed ways to enhance the competitiveness of intermodal freight transportation through regional land-use and transportation planning decisions, while also encouraging the sound development of metropolitan areas.

This article was extracted from a paper providing an overview of the factors that drive private sector decisions regarding the location and placement of freight transportation facilities and manufacturing or distribution centers. Factors such as the relative importance of proximity to traffic generators for certain markets, distribution costs, and the quality of regional transportation infrastructure are assessed.

Miscellaneous

National Transportation Organizations: Their Roles in the Policy Development and the Implementation Process: 1999 Stakeholders Directory Update, Spring 1999, 115–145.

In addition to focusing on the transportation policy-making process at the federal level, National Transportation Organizations identifies many of the major stakeholders and explains their roles in the transportation policy process. This listing updates the stakeholders portion of the book, providing current changes in contact information.

Pedestrians

Traffic Engineering Approaches to Improving Pedestrian Safety, Richard A. Retting, Spring 1999, 87–99.

Motor vehicle injury is one of the leading causes of death and disability in motorized countries. The most vulnerable road users—pedestrians—are a considerable share of those injured. Measures designed to reduce the frequency and severity of pedestrian injuries should receive high priority. Public education and enforcement campaigns are often used to promote pedestrian safety but generally have not produced tangible and long-lasting benefits. More effective and lasting safety improvements are associated with safety-oriented planning, design, and operation of transportation facilities. This article reviews the international literature regarding urban traffic planning, transportation facility design, and traffic operations—the primary means to ensure pedestrian safety. Innovative traffic control measures designed to increase pedestrian attention to potential danger and separate pedestrians and motor vehicles are emphasized.

Railroad

Review of Railroad Mergers: History, Analysis, Insight (book review), Paul D. Larson, Winter 1999, 7–9.

In his book Railroad Mergers: History, Analysis, Insight, Frank Wilner covers U.S. railroad mergers—from the April 18, 1836, merging of the Maryland & Delaware into the Wilmington & Susquehanna, to the Union Pacific/Southern Pacific merger on July 3, 1996—clearly, completely, and creatively. The author differentiates between four main methods of railroad unification: lease, financial control, merger, and consolidation.

Should Amtrak Survive as a National Rail System? Randolph R. Resor, Winter 1999, 93–107.

The debate over Amtrak's role in national transportation policy, its funding, and its operating subsidy has been one of the longest-running shows in Washington politics. Starting with Richard Nixon, every president has proposed to zero out Amtrak's operating subsidy; none has succeeded in doing so. A total of more than $21 billion has been authorized for Amtrak's operating and capital budgets over its 27 years of existence, yet Amtrak remains starved of capital investment and on the edge of bankruptcy.

Safety

The Cost-Effectiveness of Safety Options for Big Public School Buses in Florida, Michael R. Baltes, Summer 1999, 89–99.

Although the use of safety restraints of various configurations (mainly lap and lap/shoulder belts) can substantially reduce death and injury to persons involved in automobile crashes, evidence of their effectiveness in reducing death and injury in big school buses (gross vehicle weight rating greater than 10,000 pounds) remains uncertain. This article compares the cost-effectiveness of lap belts to other safety options for big public school buses in Florida. Effectiveness includes the number of deaths and injuries prevented or lessened per year by each safety option per dollar expended. Results show that higher seat-backs are the most cost-effective safety option by offering the greatest increase in safety per dollar expended. Results also indicate that a law mandating the installation and use of lap belts in big school buses in Florida would not be cost-effective and could not be justified based solely on economic grounds.

Realities of Automotive Safety, Ronald G. Burns, Winter 1999, 83–92.

In an attempt to address several consumer-related issues surrounding automobile safety, this article observes the competing interests of groups that have been involved in regulating, defining, and providing automobile safety. Specifically, the article discusses: automotive safety, including an analysis of its regulation; the roles played by both the Insurance Institute for Highway Safety and the National Highway Traffic Safety Administration in measuring automotive safety; the general public's view of automotive safety and the subsequent response by automakers; and several problems regarding current safety measurements.

Attitude of Greek Drivers Toward Road Safety, George Kanellaidis, George Yannis, and Mihalis Harvatis, Winter 1999, 109–121.

This article presents the results of an investigation of driver attitude towards road safety issues at interurban roads in Greece. It identifies a series of driver behavior characteristics with use of parametric statistical analysis methods (discriminant, cluster, and factor analysis). The findings of this analysis suggest that young male drivers and high vehicle occupancy are factors associated with speed excess, and that drivers with lower yearly mileage are more inclined to drink and drive, independently of their age. Finally, despite the almost unanimous belief that enforcement could be an important contributor to road safety improvement, enforcement at the interurban road network is considered far from efficient.

Safe Mobility for Older People: Key to a Healthy Future (editorial), Damian J. Kulash, Fall 1999, 3–5.

Maintaining the mobility of older persons is an important social and health concern. "Aging in place" allows people to stay in touch with family and friends. It keeps people in touch with

familiar services and makes it easier to cope with needs. It avoids relocation expense. It makes social and economic sense. But it depends on maintaining mobility, and this means coming to terms with the auto dependence of older persons.

Organizing for Traffic Safety: The Corridor Traffic Safety Program in the State of Washington, Steven D. Stehr, Summer 1999, 101–109.

This article summarizes the results of an evaluation of the organizational and decision-making processes associated with the Community/Corridor Traffic Safety Program in the state of Washington. The program was intended to help communities reduce collisions in specific high-crash traffic corridors by encouraging cooperation among a wide variety of public agencies from each level of government, and between public agencies and private sector groups. One of the program's goals was to encourage traffic safety managers to test a new and potentially better process for making local traffic safety policies. The results reported here indicate that the corridor project groups in Washington State were successful in developing decision-making processes involving multiple agencies and groups, despite some short-term frustration experienced by group participants.

National Transportation Safety Board Chairman Jim Hall (interview), Rupert Welch, Summer 1999, 45–52.

James Evan Hall, a member of the NTSB since October 1993, has chaired the agency since June 1994. During his tenure, the NTSB has experienced one of the busiest periods in its history. Among its more high-profile investigations are the crash of Valujet flight 592 in the Everglades, the mid-air explosion and crash of TWA flight 800 off Long Island, the derailment of the Ringling Brothers Circus train in Florida, the October 1994 crash of the American Eagle Jetstream in Raleigh–Durham, North Carolina, and the February 1995 crash of a cargo plane in Kansas City.

Transit

Planning Theories and Concepts, Implementation Strategies, and Integrated Transportation Network Elements in Curitiba, Marta E. Frausto, Winter 1999, 41–55.

Curitiba, located in the Brazilian state of Paraná, provides one of the best-known land-use and transportation network models in the world. The city is studied by transit and planning professionals for the innovative approach of its government to define the physical structure of the city and dictate the ways to achieve the form of its municipality.

This article identifies the planning theories and concepts that guide urban growth and the provision of a transportation system, the strategies used to implement the main themes of Curitiba's sense of direction, and some of the most noted elements of the city's integrated transportation network.

Models of Government Regulation of Privatized Transit Systems in Five Latin American Cities, David A. Lee, Winter 1999, 21–39.

This article focuses on models of governmental regulation and the use of customer surveys observed in the five Latin American cities visited during the eighth International Transit Studies Program (ITSP) mission. It also discusses several interesting performance measurement applications that were noticed during this mission.

William W. Millar and Hans Rat: Advocates for Public Transportation (inter-

view), C. Kenneth Orski, Winter 1999, 57–65.

The two major associations in the field of public transportation—the American Public Transit Association (APTA) in North America and the Brussels-headquartered International Association of Public Transport (UITP) representing transit systems throughout the world—have both experienced a change of leadership.

Millar, taking the helm at APTA, and Rat, who assumed the post of secretary-general at UITP, are articulate advocates for public transportation and firm believers in the value of building close professional and institutional links within the international transit community.

Passenger Handling in Downtown Areas of Australia and New Zealand, Lynn O. Purnell, Fall 1999, 83–89.

Although a major focus of the ninth International Transit Studies Program (ITSP) mission was to study efforts in privatizing public transit services, the trip also provided an opportunity to see how cities in Australia and New Zealand accommodate the tremendous numbers of public transit riders to their central business districts.

Bus Prioritization Measures in New Zealand and Australia, Cheryl D. Soon and Kang Hu, Fall 1999, 91–108.

This article focuses on bus prioritization measures in New Zealand and Australia, with emphasis on the countries' policies and practices of transit priority treatments that are either planned or have been implemented. Particular attention is given to the implementation of bus rapid transit systems that many U.S. cities are currently planning as an alternative to capital-intensive rail systems.

The Taxi as a Transit Mode, Michel Trudel, Fall 1999, 121–130.

Using taxis to provide public transportation service could serve as a cost-effective solution to meet the needs of ever demanding customers more efficiently. In Québec, several public transportation taxi services have been established as complements to traditional bus services. In September 1993, transportation authorities in Rimouski, a city in eastern Québec, implemented taxibus, a demand-responsive public transportation service that relies solely on local taxicabs. Rimouski's successful taxibus service is considered a viable alternative to traditional transit systems using buses.

Transportation Education

The New Transportation Faculty: The Evolution to Engineering Systems, Joseph M. Sussman, Summer 1999, 15–26.

The responsibility for educating the "New Transportation Professional" falls on the transportation faculty in colleges and universities. This article focuses on the "New Transportation Faculty"—the educator of the New Transportation Professional.

Transportation Funding and Financing

Air, High-Speed Rail, or Highway: A Cost Comparison in the California Corridor, David Levinson, Adib Kanafani, and David Gillen, Winter 1999, 123–131.

This study evaluates the full cost of three modes of intercity transportation: air, highway, and high-speed rail for the California corridor, connecting the Los Angeles basin and the San Francisco Bay area in order to compare the economic implications of investment in, or expansion of, any of these three modes. This study presents estimates of four types of external, social costs: accidents, congestion, noise, and air pollution. Based on the results, it is con-

cluded that the full cost of air transportation for the California corridor [$0.1315 per passenger-kilometer traveled (pkt)] is significantly less costly than the other two modes. High-speed rail and highway transportation have approximately the same full cost: rail costs $0.2350/pkt and highway costs $0.2302/pkt. However, the modes have a different distribution of internal and external costs: automobiles have the highest external costs, while high-speed rail has the highest internal costs.

How Local Jurisdictions Finance Traffic-Calming Projects, Asha Weinstein and Elizabeth Deakin, Summer 1999, 75–87.

Financing traffic-calming projects and programs is of key importance to many practitioners who work under increasingly strained local government budgets. This article presents findings from an extensive literature review and telephone survey of 63 local governments implementing traffic calming, and explains how these jurisdictions pay for their projects. The article reports that most jurisdictions rely on public funds, with a substantial minority requiring that residents, and sometimes developers, share the costs. City and county funding mostly comes from public works budgets, though traffic calming also has been funded from redevelopment programs and state traffic safety programs. Federal transportation funds were infrequently sought for traffic calming, principally because the application process was too costly and time consuming for small projects. Reliance on local financing tilts traffic-calming programs towards the cheapest installations, although in some situations a more costly device or strategy would be more satisfactory to the community at large. In addition, most localities have addressed traffic-calming needs on a spot-fix basis rather than through more costly, but potentially more effective, neighborhood or district plans.

Transportation History

Bridging People and Time: A Prayer (editorial), Damian J. Kulash, Spring 1999, 3–5.

The bridge at Mostar, once a beautiful stone arch flung high above the sparkling waters of the Neretva flowing through a picturesque village in Bosnia–Herzegovina, was destroyed in fighting on November 3, 1993. A priceless history, legend, and symbol has been lost in our lifetime. This loss of property cannot compare with the loss of life from the fighting in Bosnia. Nor does it measure the human suffering experienced there.

The World Bank, UNESCO, the European Union, and others have joined with the city of Mostar to rebuild the old bridge as "a symbol of peace and reconciliation between the peoples of Bosnia and Herzegovina." All of Mostar's cultures and religions have united together to rebuild it. As the reconstructed bridge once again connects the parts of Mostar on opposite banks of the river, it will testify to society the history of unity among diverse cultures, the unity to join efforts to rebuild, and the vision of a future, lasting society.

National Studies of the U.S. Transportation System, Edward Weiner, Winter 1999, 11–20.

National studies have provided an important perspective on the functioning of the U.S. transportation system. They have increased our understanding of the individual modes of transportation and how they interrelate. These studies have focused attention on the major national transportation issues and assessed options to addressing these issues. They have often provided guid-

ance for national transportation programs.

Transportation Planning

Y2K and WNRO: Implications for Transportation, Said M. Easa, Eva Lerner-Lam, and Kenneth R. Harvey, Summer 1999, 53–74.

The Year 2000 (Y2K) problem stems from the fact that many computing systems use a two-digit format for the year instead of four digits. On January 1, 2000, computing systems may shut down or recognize 2000 as 1900, creating further problems with other dates. The week number rollover (WNRO) problem of the Global Positioning System (GPS) will occur less than four-and-a-half months prior to the end of the century, on August 22, 1999. This is caused by the GPS timekeeping system, designed with a 1,024-week cycle beginning on January 6, 1980, which will roll over from 1,023 to 0. The WNRO problem, not directly related to the Y2K problem, will affect GPS receivers that are not programmed to take this GPS week cycle into account. This article addresses the implications of these two problems on transportation systems. It defines the Y2K and WNRO problems and discusses their impacts on various modes of transportation and related systems. An action plan to deal with these problems is presented. The plan presents current efforts and proposes a conceptual Y2K model that calls for a quick, effective, and partnership-based effort. The model was applied to the public transit sector to illustrate how it might be implemented in practice. Useful information exchange tools and contingency planning (key elements of the action plan) are described. Important aspects related to legal and community issues are also briefly addressed.

The Evolution of Travel Demand Management, Erik Ferguson, Spring 1999, 57–78.

Travel demand management (TDM) is a natural outgrowth of transportation systems management, itself a modification or expansion of the traditional urban transportation planning process. TDM developed during the 1980s as a response to increasing traffic congestion and air pollution problems, with more of a travel behavior and private sector orientation than its predecessors. Current issues facing TDM and its practitioners include ease of implementation and political acceptability, or the lack thereof, as the case may be.

Mobility Demands of Urban Fields, Sigurd Grava, Fall 1999, 109–120.

During the last decade, the average commuting trip in the United States has marginally increased in physical distance, but slightly decreased in time. There are more motor vehicles in the country than there are licensed drivers. The use of carpools is ebbing. In all metropolitan areas, the pace of land consumption by new construction is far above the rate of population or employment growth. More people have been commuting to suburban job locations than to the central core for some time now. Shopping malls are the contemporary points of congregation and social interaction, and the term "edge cities" is entering the language. Everybody in North America knows or senses this, and most agree that that is how we live and build cities today. We also know the reasons for these phenomena: the voluntary dispersal of residences over metropolitan space generating a condition called "sprawl," which is a concern now in the public and political domain, and the decentralization of work and service facilities over the same large territory. These conditions have been surveyed, documented, and decried many times.

A Global Review of Energy Use in Urban Transport Systems and Its Implications for Urban Transport and Land-Use Policy, Jeff Kenworthy and Felix Laube, Fall 1999, 23–48.

The use of energy in urban transport systems is a critical dimension in the sustainability of cities. And, as the 21st century approaches, more attention is being placed on this issue because of the problematic global outlook for traditional oil supplies, and the effect that the burning of fossil fuels has on greenhouse gas emissions.

Automobile cities, such as those in the United States, use eight times more energy per capita in private passenger transport systems than in more public transport–oriented Asian cities. These patterns can be traced to population trends in metropolitan regions and the various transport factors that flow from low-density, heavily zoned suburban-based cities compared to high-density, mixed land-use cities such as those in Asia. Energy-use patterns cannot be defined in terms of a city's wealth, as is often claimed. Public transport energy use per capita represents a tiny fraction of that in private transport, even where public transport plays the major role in a city's transport system. Public transport offers huge savings in energy use and reduces greenhouse gas emissions. Some policy implications, in terms of urban land-use change and transport infrastructure priorities, can further reduce energy use in transport and offer cities other positive outcomes for livability and sustainability.

Smart Growth: Coming to a Place Near You (Ideas in Motion), Roy Kienitz, Fall 1999, 10–13.

Smart growth is not about telling people they can't live in the suburbs, it's about improving all kinds of existing communities so that they can offer people the things they have chased the urban fringe to enjoy.

Keeping an Eye on Emerging Issues (editorial), Damian J. Kulash, Winter 1999, 3–6.

While the rules of transport within Europe and North America continue to be dealt with inside their respective regions, the two sets of rules will increasingly impinge as intercontinental haulage increases. They will also face more and more common issues as infrastructure improvements are made, as surface transportation vehicles evolve, and as larger ocean vessels are introduced.

Are today's rules of the game working for international intermodal transport? Can we increase efficiency and productivity by adjusting the rules? Answers to these complex questions are different for shippers and carriers; for railroads, motor carriers, and ocean lines; for governments and private interests; and for Europeans and North Americans. A continued dialogue between these diverse interests is essential to identify opportunities that align with the disparate needs of all players, and which can contribute to the economic benefit of both regions.

Facing Up to Global Climate Change (editorial), Damian J. Kulash, Summer 1999, 3–4.

The Eno Foundation launched a monthly seminar series on global climate issues. The series focuses on underlying trends, projections, mechanisms, technological options, program evaluations, and policy choices. The Foundation is commissioning experts on these aspects to develop background papers that will be compiled in a book. The seminar series and book will yield a reliable, highly credible resource for leaders who struggle to address this

difficult problem, for professionals whose efforts support research, and for students of public policy in this area

A New Transportation Paradigm (Ideas in Motion), A. Scheffer Lang, Fall 1999, 14–22.

Since the European settlement of North America, the U.S. transportation network has been successively built to connect ports with their hinterlands, farms with towns, and towns with towns. It then expanded to provide lower cost transportation with inland canals, even lower cost transportation with railroads, circulation within growing urban centers, and all-weather roads for motor vehicles. The network has progressed to the point where it now includes both air transportation and widespread automobile ownership and use.

Most of the conventional response to our contemporary transportation problems are doomed to be ineffective. We have a body of both theoretical and empirical research on transportation dating back more than 40 years that tells us so. Thus, it seems that we need a new "paradigm."

In Search of 'Livability'—A Commentary (Ideas in Motion), C. Kenneth Orski, Fall 1999, 7–10.

Vice President Al Gore's "Livability Agenda" has been hailed by environmentalists as an opening salvo in the battle against "sprawl." The environmental movement pins its hopes on creating a grassroots "smart growth" movement that will lead to legislation and governmental action to stem low-density development. Transit interests also have jumped on the antisprawl bandwagon, seeing it as a vehicle for promoting their New Urbanist vision of "transit villages"—close-knit neighborhoods whose residents have renounced the automobile in favor of walking and using transit for trips outside the immediate community.

But the likelihood of mobilizing an army of aroused citizens to march against sprawl strikes most observers as wishful thinking.

Two Climatologists Discuss the Issue of Global Warming (interview), Rupert Welch, Winter 1999, 67–82.

Scientific opinions about global warming questions extend over a continuum and disputes among some of the scientists have tended towards the rancorous. Exacerbating the situation is a dearth of accurate data on changing conditions in the upper atmosphere. Talking to any two opposing scientists about global warming will not produce a wide-angle view of the subject, but it will give snapshots of two points on the continuum. Both the facts and the interpretations of the facts are at issue. The two scientists interviewed in this article are Kevin E. Trenberth of the National Center for Atmospheric Research in Boulder, Colorado, and Patrick J. Michaels of the University of Virginia in Charlottesville.

Transportation in America: A Statistical Analysis of Transportation in the United States (supplement to the 16th edition), Rosalyn Wilson, Summer 1999, 121–139.

This analysis includes data on tonnage and passenger miles by mode, public and private costs for providing transport services, transport employment data, and other valuable information necessary to better understand changes that occur in the transportation picture in the United States. It serves as a basic reference that describes, in statistical terms, the role of transportation in the U.S. economy and comparative roles of the various modes of both freight and passenger transport.